DOCUMENT RESUME

ED 076 231 PS 006 436

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TITLE	Development of Resolution in Children's Appreciation of Humor.
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PUB DATE	Mar 73
NOTE	17p.; Paper presented at the biennial meeting of the Society for Research in Child Development (Philadelphia, Pennsylvania, March 29 - April 1, 1973)
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Age Differences; *Children; *Cognitive Development; Cognitive Processes; Developmental Psychology; *Humor; Literature Reviews; Mental Development
IDENTIFIERS	*Freud (Sigmund); Piaget (Jean)

ABSTRACT

The theory of a number of philosophers and psychologists, including Freud, is that humor is a biphasic sequence involving first the discovery of incongruity and then the resolution of the incongruity. Without the mechanism of resolution, we cannot distinguish humor from nonsense. The punch line of a joke is seemingly incongruous with the preceding part, but the resolution, usually based on some type of linguistic ambiguity, makes the incongruity seem appropriate. Freud proposed that processes similar to incongruity and resolution appear in a certain developmental sequence. Following an early stage during which pure incongruity or nonsense is enjoyed, the child gradually comes to prefer resolvable or meaningful incongruity. Studies have shown this to be true. Research using incongruity-removed and resolution-removed versions of jokes has shown that third, fifth, and seventh graders find the original jokes funnier than the resolution-removed versions and the resolution-removed forms funnier than the incongruity-removed forms. First graders showed no difference between the original and resolution-removed versions but found both funnier than the incongruity-removed forms. These and other experiments strongly suggest that the transition from appreciation of nonsensical incongruity to preference for resolvable incongruity occurs between the ages of 6 and 8 years. This raises the possibility that the transition may be related to the onset of concrete operational thought. (RM)

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Development of Resolution in Children's Appreciation of Humor

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PS 006436

This paper was presented at the biennial meeting of the Society for Research in Child Development, March, 1973, in Philadelphia. The research reported herein was supported in part by grant No. S71-0044 from the Canada Council.

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No one really knows how long man has been trying to understand the process of humor. Philosophical speculations about the nature of humor are apparently as old as the analysis of any other aspect of the human psyche. Western philosophers have traditionally considered humor as deserving of study as any of the other fundamental human characteristics. This remained true even during the infancy of psychological research. For example, one can find systematic treatments of humor in the work of some of the early psychoanalytic and gestalt theorists.

However, as the behavioristic revolution swept over North America during the 1920s and 30s, it effectively buried legitimate concern with humor or with any process that smacked of mentalism or structuralism. With the aid of several decades of hindsight, most of us would agree that this was a premature and unfortunate burial since it temporarily rendered psychology incapable of dealing with any of the processes that are distinctively human and, thus, most deserving of our time.

During the last 10 or 15 years, North American psychology began to recover from the excesses of behaviorism. As part of this recovery, humor has enjoyed a kind of renaissance which shows promising signs of continued growth.

Like most interesting phenomena, humor can be viewed from a variety of perspectives. One recurrent perspective has been to regard humor as a

cognitive process, a fundamental form of human thought. In order to study the cognitive nature of humor, many theorists have attempted to identify the structural characteristics of those situations and events that produce humor. It is often assumed that, regardless of what the joke happens to be about, it must possess the same underlying structure as jokes dealing with other content areas. It is further assumed that the person's cognitive processes must correspond to this universal joke structure in order for him to fully appreciate any given joke.

Humor theorists such as Kant (1790), Schopenhauer (1819), Maier (1932), and Koestler (1964) have proposed that the structure of humor is characterized by incongruity. Incongruity is usually defined as a conflict between what is expected and what actually occurs in the joke. The concept of incongruity accounts well for the most obvious structural feature of jokes, i.e., the surprisingness of the punchline.

A number of other theorists, including Beattie (1779), Freud (1905), Willian (1940), and Jones (1970), have argued that incongruity alone is not sufficient to account for the structure of humor. They have proposed that there exists a second, more subtle aspect of jokes which serves to render incongruity meaningful or appropriate by resolving or explaining it. In this framework, humor is conceptualized as a biphasic sequence involving first, the discovery of incongruity followed by a resolution of the incongruity (cf. Shultz, 1970; 1972). Without the mechanism of resolution, we would be unable to distinguish humor from nonsense. Humor can be characterized as resolvable or meaningful incongruity, while nonsense can be characterized as pure or unresolvable incongruity.

The incongruity in a joke consists of the relation between the last or punch-line and the part that precedes the last line. Consider the following children's joke as an example: The judge calls, "Order! Order in the court!" and someone answers, "I'll have a ham and cheese on rye, please, Your Honor." (Slide 1) In this joke, the request for a sandwich is incongruous with the judge's demand for order. The incongruity can be resolved by seeing that part of what came before the last line is ambiguous, i.e., it has more than one semantic interpretation. Once the second or hidden meaning has been discovered, the incongruity created by the last line makes sense or seems appropriate. In this particular joke, the ambiguity arises from the polysemy of the lexical item "order". The listener initially interprets "order" as "a request for quiet" and then later discovers that it could also be interpreted as "a request for food".

Quite a substantial number of the jokes and riddles I have analyzed possess resolutions based on some type of linguistic ambiguity. In addition to resolutions based on polysemy, there are resolutions based on phonological confusions such as those dealing with the boundaries between consecutive words. There are also resolutions based on ambiguities resulting from syntactic relations between words; these can occur at either the level of surface structure or the level of deep structure. Still other types of jokes and riddles possess resolutions which depend upon general, non-linguistic knowledge rather than upon a specific linguistic device (cf. Shultz & Horibe, 1973 for a more complete discussion of these resolution types).

The true developmental psychologist might suspect that the processes I have been discussing may successfully account for the structure of humor in

nature but not the structure of humor in young children. What I have just described in terms of incongruity and resolution represents the ideal terminus towards which the child's humor must progress.

Freud seemed to have sensed this idea as early as 1905. In a little-known section of his classic work on Jokes and Their Relation to the Unconscious, he proposed that processes similar to incongruity and resolution appear in a certain developmental sequence. Following an early stage during which pure incongruity or nonsense is enjoyed, the child gradually comes to prefer resolvable or meaningful incongruity.

Examples of this early stage are very common in the social exchanges of preschool children. For example, the one-liner, "How would you like to eat a horse?" was observed to crack-up a group of nursery schoolers for a full ten minutes. Another example is provided by children in a day care center who spent a good part of one morning enjoying exchanges of the following type:

"You're a zipper."

"No, I'm not a zipper, I'm a snap."

Other naturalistic observations of children's laughter by Wilson (1931) indicated that nonsensical incongruities such as these are most appreciated between the ages of 3 and 5 years. Laughter induced by nonsense became less frequent after 5 years and was gradually replaced by enjoyment of puns, word plays, and other resolvable joke forms.

The decreasing funniness of nonsensical incongruity with increasing age was also indicated in a study by Buehler (1921). She presented children with a series of absurd pictures such as a tiny horse pulling a huge wagon, a

plant with human attributes, or a man sawing off the tree branch on which he is sitting. Buehler found that the percentage of children being amused at these incongruities decreased steadily from 100% at 2 years to 0% at 8 years.

It is not always a trivial matter to determine whether or not a given child appreciates the resolvable nature of humor. Consider for a moment two hypothetical connoisseurs of humor, Billy and Jonathan. With the advantage of being able to specify the cognitive structures of our hypothetical children, we will assume that Billy appreciates only the incongruous aspects of jokes but has no appreciation of or sensitivity to the resolvable aspects. Jonathan, on the other hand, being a more rigorous type, is able to appreciate joke resolutions and regards pure incongruity as silly nonsense. How can we correctly diagnose these differences in underlying cognitive structures? Both children may show a genuine enjoyment of standard jokes such as the "Order in the court" joke discussed earlier. Billy may enjoy this joke for its incongruity and Jonathan for the resolution of its incongruity. To make matters worse, both children may be able to relate to us a whole series of jokes and riddles from memory. If they have remembered the jokes correctly, we will again fail to achieve the correct diagnosis of underlying cognitive differences. Both sources of evidence might well lead us to overestimate Billy's cognitive abilities.

Piaget has repeatedly demonstrated that we must prepare specially contrived situations to avoid overestimating the child's cognitive structures. For example, in diagnosing the child's understanding of hierarchical categorization, we are not content to ask if roses and daisies are flowers; we also ask whether there are more daisies or more flowers (Inhelder & Piaget, 1964).

PS 00436

In my research on children's humor, I used standard jokes as well as systematic variations which had either the incongruity or the resolution deleted. The incongruity-removed versions were created by making the last line congruous or consistent with the preceding lines. (Slide 2) For example, "I only want the truth to be told, Your Honor" is a congruent response to "Order! Order in the court!" In the resolution-removed versions, the incongruity is left intact and information relevant to the resolution is deleted. (Slide 3) For jokes resolved by linguistic ambiguity, this manipulation involves the elimination of the second or hidden meaning in favor of the first or biased meaning. For example, the ambiguous term "order" is replaced by the unambiguous term "silence". The incongruity of someone asking for a sandwich in the courtroom is still present in this version, but now there is no longer a good resolution for it.

In one experiment (Shultz & Horibe, 1973), children in grades 1, 3, 5, and 7 were presented with a series of original, resolution-removed, and incongruity-removed jokes of various resolution types. The jokes were presented on audio tape and on a typed card as well. There was a restriction that each child heard only one version of a given joke; this was to avoid making the joke manipulations too obvious to the children.

Measures of the child's appreciation and comprehension of each item were obtained. One of the appreciation measures involved the experimenter's assessment of the child's spontaneous emotional reaction. This measure has been termed the "mirth response" by previous researchers (Zigler, Levine, & Gould, 1966). In our experiment, there were four mirth response categories. (Slide 4) If the child exhibited no response or failed to alter his facial

expression, he was given a "0". If he gave a slight or inhibited smile, he received a "1". If he showed a full smile, he received a "2". And if he laughed, he was given a "3".

The mean mirth response scores are presented in the next slide as a function of grade and joke form. (Slide 5) The pattern of means indicates that third, fifth, and seventh graders found the original forms funnier than the resolution-removed forms and the resolution-removed forms funnier than the incongruity-removed forms. In contrast, the first graders showed no difference between the original and resolution-removed forms but found both of these forms funnier than the incongruity-removed forms. The Grade x Form interaction for these data was highly significant, F (6,192) = 15.74, $p<.001$. Comparisons between individual means were made with Tukey's procedure (Winer, 1962) using the .05 level of significance.

Thus, it appeared that the first graders appreciated the incongruity structure, but not the resolution structure, of the jokes while the older children appreciated both structural components. This conclusion was further supported by the finding that first graders had considerable difficulty in comprehending the resolutions of original jokes, particularly the hidden meaning of the ambiguity.

A similar experiment with riddles (Shultz, 1973) produced nearly identical results. First graders appreciated the incongruity structure, but not the resolution structure, of the riddles while third, fifth, and seventh graders appreciated both structural components. Once again, the first graders had particular difficulty comprehending the hidden meaning of the ambiguity which was necessary for a successful resolution of original riddles.

The results from these experiments strongly suggest that the transition between an early stage of appreciation of pure incongruity and a later stage characterized by preference for resolvable incongruity occurs between the ages of 6 and 8 years. The timing of this transition raises the possibility that it may be related to the onset of concrete operational thought. This would make sense in general terms since the systematic organization of cognitive schemes that characterizes the period of concrete operations might well serve as a necessary background for the need to resolve incongruities in order to enjoy them. The cognitive structures of the preoperational child are often characterized as being relatively free from logical constraints. There is a certain playfulness and spontaneity of thought enriched with a good deal of symbolization and pretense. As the child passes into the period of concrete operations, his cognitive structures become more systematized, more precise, and less tolerant of deviations from concrete reality. These differences may contribute to the impression that the concrete operational child is somehow psychologically duller than the preoperational child.

It seems to me that the transition from the looser, preoperational thinking to the more tightly organized, concrete operational thinking must be regarded as a mixed blessing. Whatever is gained in the way of logical precision and ability to interpret concrete events must be weighed against the losses in freedom, spontaneity, and fantasy. One thing that appears to be lost is the capacity to enjoy the incongruous juxtaposition of a vast number of interesting pairs of ideas. From now on, only those incongruities which can be successfully resolved or explained can be fully enjoyed; unless, of course, one is able to achieve some sort of conceptual regression or temporary

suspension of cognitive organization. These states are most often reached through certain social interactions, sometimes with the aid of drugs and sometimes through giddiness or fatigue. They are highly valued by most people since they provide an opportunity to once again enjoy pure nonsense. Under these circumstances, almost any extraordinary juxtaposition of ideas can be intensely amusing and almost anyone can be a successful comedian.

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Slide 1

Original Form

Order! Order in the court!

Ham and cheese on rye, please, Your Honor.

Slide 2

Incongruity-Removed Form

Order! Order in the court!

I only want the truth to be told, Your Honor.

Slide 3

Resolution-Removed Form

Silence! Silence in the court!

Ham and cheese on rye, please, Your Honor.

Slide 4

Mirth Response Scale

0 = No response

1 = inhibited or slight smile

2 = full smile

3 = laugh

Slide 5

Grade	Joke Form				
	Original		Resolution-Removed		Incongruity-Removed
1	.60	=	.62	>	.37
3	1.00	>	.74	>	.40
5	1.26	>	.63	>	.30
7	1.22	>	.54	>	.26